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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,843	05/31/2005	David Graham Taylor	045637-005	4671
25461 7590 04/14/2009 SMITH, GAMBRELL & RUSSELL SUITE 3100, PROMENADE II 1230 PEACHTREE STREET, N.E. ATLANTA, GA 30309-3592				
EXAMINER				
JACKSON, MONIQUE R				
ART UNIT		PAPER NUMBER		
1794				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/506,843

**Applicant(s)**

TAYLOR, DAVID GRAHAM

**Examiner**

Monique R. Jackson

**Art Unit**

1794

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 and 14-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

1. The amendment filed 1/27/09 has been entered. Claim 13 has been canceled. Claims 1-12 and 14-41 are pending in the application. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 102***

2. Claims 1-6, 10, 12, 14-21, 24-28, and 31-35 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 96/28378 (WO'378.) WO'378 teaches a cork closure comprising a mass of cork wholly or partially encapsulated in at least one durable, liquid-impermeable coat of a coating material(s) wherein the coating material is preferably PVC or polyurethanes and the thickness of the coat(s) can vary depending on the application of the closure from 0.1 to 5.0 mm or more, wherein for wine bottle applications, the total thickness of the coat(s) is preferably 0.2 to 2.0 mm (Abstract; Page 1, line 26-Page 2, line 31.) WO'378 teaches that multiple coats of the coating materials may be applied wherein the coating material may be the same or different in composition (Page 2, lines 8-13; would read upon Claim 20.) In the case of polyurethanes, WO'378 teaches that low friction qualities may also be varied by adjusting the amount and/or kind of plasticizer used or extenders (Page 2, lines 15-18.) WO'378 teaches that the coating may be applied onto the mass of cork by dipping, spraying and/or injection molding (reads upon "formed by the application of a reactive hot melt") wherein the coat may only be applied to a portion of the surface, such as the faces of the closure, or applied to fully encapsulate the cork (Page 3, lines 1-5; Abstract.) WO'378 also teaches that the individual cork particles may be coated or encapsulated with the coating material (Page 3, lines 6-10; reads upon Claim 16.) WO'378 teaches that the coated corks are suitable for sealing wine barrels and wine bottles and

that depending upon the desired thickness of the coat(s), standard cork closure may be utilized though where thicker coating(s) are required, e.g. 2.0 to 3.0mm, it may be necessary to use corks of reduced diameter (Page 3, lines 11-20.) Though WO'378 does not specifically teach the oxygen permeability as instantly claimed, the Examiner takes the position that the polyurethane having a thickness of up to 3.0mm as taught by WO'378 would inherently encompass the instantly claimed oxygen permeability. In terms of the claimed shape limitations, the Examiner takes the position that one would clearly envisage a cylindrical shape as well as a rounded or beveled face as claimed given the teachings of WO'378 with respect to a wine bottle cork. With respect to Claim 19, the Examiner takes the position that the coating on the sides of the cork read upon the claimed limitation.

3. Claims 1-5, 9, 10, 12, 14-15, 17, 19, and 24-27 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 00/64647 (WO'647) for the reasons recited in the prior office action and restated below.

4. WO'647 teaches a method for producing a coating or diffusion layer on a substrate such as a cork for use in contact with food or beverage, wherein said coating or diffusion layer prevents or inhibits passage therethrough, such as from a cork to an alcoholic beverage like wine, and limits oxygen permeability (Abstract; Page 1-2.) WO'647 teaches that the method comprises applying an effective amount of a barrier polymer to the surface of the substrate, wherein the barrier polymer may be in the form of a polymer film and may be those selected from the listing of polymers on pages 4-5, including polyurethane, polyethylene vinyl alcohol (EVOH), laminate films comprising polyolefins, polyethylene terephthalate (PET), EVOH, and/or polyamides (Pages 3-5.) WO'647 also teaches that the polymers can be applied to the

cork by conventional methods including reactive adhesion and melt polymer application, and the polymers may further comprise lubricants (reads upon "additives") to allow the coated cork to be easily inserted and removed from the bottle (Page 6.) WO'647 teaches examples utilizing a laminate comprising polyethylene/metallized PET/polyethylene, as well as a laminate comprising polyethylene/polyethylene vinyl alcohol/polyethylene (Examples 8-9). WO'647 also provides an example utilizing a polyurethane formed from a polyurethane coating applied to the cork by dipping the cork into the coating and curing at 40°C (Example 4), wherein the Examiner takes the position that this example reads upon the claimed final cured, coated stopper and would inherently meet the claimed limitations with respect to permeability. In terms of the claimed shape limitations, the Examiner takes the position that one would clearly envisage a cylindrical shape as well as a rounded or beveled face as claimed given the teachings of WO'647 with respect to a wine bottle cork. With respect to Claim 19, the Examiner takes the position that the coating on the sides of the cork read upon the claimed limitation.

5. Claims 1-10, 12, 14, 15, 17-22, 24-29, 31-37, and 39-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Hanaya et al (USPN 4,745,014) for the reasons recited in the prior office action and restated below wherein the Examiner takes the position that the packaging material and "sealing cap" taught by Hanaya et al reads upon the broad term "stopper" given that the instant disclosure does define or not limit the "stopper" to a particular structure such as a barrel stopper.

6. Hanaya et al teach a packaging material and sealing cap formed from the packaging material comprising a metallic foil and at least one synthetic resin film (*reads upon a substrate*) adhered to the metallic foil via an adhesive, wherein Hanaya et al teach that a preferred adhesive

is a urethane resin of the two-pack curable type comprising an organic polyisocyanate and a polyol component (reads upon "reactive hot melt polyurethane"; Abstract; Col. 2, lines 39-65; Col. 4, lines 38-56.) Hanaya et al teach that the metallic foil can be aluminum or aluminum alloy having a thickness of about 5 to about 30 microns (*inherently has an oxygen permeability as claimed*); and the synthetic resin film can be polypropylene, polyethylene, polyvinyl chloride, polystyrene, polyester, etc., having a thickness of about 20 to about 100 microns, and can be applied to both surfaces of the metal foil (Col. 3, lines 9-14 and 59-68; Col. 4, lines 3-10.) Hanaya et al also teach that the metal foil can be provided with a colored layer comprising pigments or dyes in a binder (Col. 4, lines 23-38.) Hanaya et al further teach that the packaging material can be used as a cap for cap for sealing bottles of wine or champagne, and can be provided over the mouth of a wine bottle closed with a cork cap and heat shrunk over the mouth to seal the capped mouth (Abstract; Col. 6, lines 25-47.) Hence, the packaging film taught by Hanaya et al as well as the cap formed from the film and the capped bottle with a cork (Figures), all read upon the broadly claimed "stopper" including the shapes and permeability ranges as claimed, given that even the unshaped film taught by Hanaya et al is capable of being a "stopper" and may be inserted into a neck of a bottle to "stop" liquid flow.

***Claim Rejections - 35 USC § 103***

7. Claims 7-9, 11, 22-23, 29-30, and 36-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO'378 in view of WO'647. The teachings of WO'378 are discussed above. Though WO'378 teaches that the thickness of the coating can vary depending on the application of the closure from 0.1 to 5.0 mm or more, wherein for wine bottle applications, the total thickness of the coat(s) is preferably 0.2 to 2.0 mm, one having ordinary skill in the art at the

time of the invention would have been motivated to utilize routine experimentation to determine the optimum coating thickness to provide the desired coating or barrier properties for a particular end use. With regards to the claimed “aliphatic” polyurethane or “forming a pre-polymer” from an isocyanate solution and a polyol solution that is applied as a hot melt, the Examiner notes that WO’378 teaches polyurethanes in general wherein one having ordinary skill in the art at the time of the invention would clearly recognize to encompass aliphatic polyurethanes as well as prepolymers as claimed given that polyurethanes are conventionally formed by reacting an isocyanate with a polyol. With respect to Claim 11, though WO’378 teaches that the polyurethane coating may comprise additives such as plasticizers and extenders, WO’378 does not specifically teach the claimed additives however metal oxides and the other additives instantly claimed are obvious, conventional additives utilized in the art and would have been obvious to one having ordinary skill in the art at the time of the invention. With regards to Claims 29-30, 38 and 40-41, WO’378 teaches that the coating may be formed from multiple coating layers of the same or different coating material including polyurethanes as well as polyethylene and ethylene vinyl copolymers, however, WO’378 does not specifically teach the instantly claimed EVOH, layer order or a layer of metal foil or vacuum deposited metal. However, WO’647 teaches the use of an EVOH layer and a metal layer to provide improved barrier properties to the coated stopper and hence one having ordinary skill in the art at the time of the invention would have been motivated to utilize any number of coating layers and/or to incorporate an EVOH and/or metal layer as taught by WO’647 in the coated cork stopper taught by WO’378 to provide the desired barrier properties for a particular end use wherein hot melt

application of a lower or adhesive layer to a substrate and/or outer layer to bond the two is an obvious method of providing multiple coating layers to a substrate.

8. Claims 6-8, 11, 18, 20-23, and 28-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO'647. The teachings of WO'647 are discussed above. Though WO'647 teach that the barrier polymer can be applied by reactive adhesion or hot melt polymer, WO'647 does not specifically teach the reactive adhesive is a reactive hot melt polyurethane as claimed. However, considering WO'647 teach the use of polyurethane as a coating barrier polymer and given that polyurethane is an obvious species of adhesive utilized in the art as both a reactive and hot melt, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize a reactive hot melt polyurethane as the adhesive to bond any of the barrier films taught by WO'647 to the cork. Though WO'647 teach that the polymer coating provides a barrier and limits oxygen permeability, WO'647 does not specifically teach the coating thickness as claimed. However, one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum barrier layer thickness to provide the desired barrier properties based on the barrier material selected. In terms of Claim 11, though WO'647 teach that the barrier polymer may further comprise lubricants, WO'647 does not teach the claimed additives however powdered PTFE is an obvious species of lubricant utilized in the art and metal oxides are an obvious species of conventional additive utilized to provide color as well as other desired properties. Lastly, though WO'647 teach examples wherein the coating is applied to the entire cork, one skilled in the art at the time of the invention would have been motivated to determine the desired coverage of the barrier coating to provide on the cork based upon the desired barrier properties for a particular end use.



9. Claims 11, 17, 23, 30 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanaya et al. The teachings of Hanaya et al are discussed above. Though Hanaya et al teach that the packaging film can comprise a colored layer including pigments (reads upon "additives"), Hanaya et al do not specifically teach that the pigments are metal oxides, however, metal oxides are an obvious species of pigment utilized in the art and would have been obvious to one skilled in the art at the time of the invention. With respect to the claims incorporating an ethylene vinyl alcohol layer, it is noted that Hanaya et al teach the use of various thermoplastic resin including polyolefins, ethylene vinyl acetate, carboxylated ethylene vinyl acetate, and vinyl chloride-vinyl acetate copolymers. Though Hanaya et al do not specifically teach EVOH, one having ordinary skill in the art at the time of the invention would have been motivated to utilize EVOH given its known barrier properties and functional equivalence to layers taught by Hanaya et al, including as a substitute material for a metal foil, and hence would have been obvious to one skilled in the art in producing the packaging film taught by Hanaya et al.

***Response to Arguments***

10. Applicant's arguments filed 10/7/08 have been fully considered but they are not persuasive. With regards to WO'647, the Applicant argues that the claimed "reactive hot melt" polyurethane is different from the solvent-based polyurethane coating taught by WO'647 in that it provides the advantages of good adhesion and elasticity which will not result from the use of the solvent-based or two-part polyurethanes as taught by the prior art. However, the Examiner respectfully disagrees and notes that the Applicant's claimed invention does not require any particular level of adhesion or elasticity and hence maintains her position that the invention taught by WO'647 would read upon the final product as instantly claimed. With regards to

Hanaya et al, the Applicant argues that Hanaya discloses a packaging material not a "stopper" wherein the specification clearly defines the term "stopper" as being one that may be inserted into a receptacle to close an opening. However, the Examiner notes that at page 1 of the specification, the Applicant recites that "it will be understood that the terms 'stoppers' and 'stopper' **should not be construed in a limited manner** but should be construed as **encompassing** any stopper which may be inserted into a receptacle to close an opening in the receptacle" in the second paragraph (emphasis added). The Examiner notes that the term "encompassing" is an open-ended term and hence does not limit the stopper to only those that may be inserted into a receptacle as argued by the Applicant but also notes that the packaging material taught by Hanaya may be inserted into the neck of a bottle to "stop" liquid flow and further reads upon the broad term "stopper".

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R. Jackson whose telephone number is 571-272-1508. The examiner can normally be reached on Mondays-Thursdays, 10:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Monique R Jackson/  
Primary Examiner, Art Unit 1794  
April 13, 2009